

WHAT IS CLAIMED IS:

1. A method of controlling wireless communications between a first frequency hopping wireless communication device and a second frequency hopping wireless communication device, comprising:

5 the first device sending to the second device a first transmission on a first frequency specified by a frequency hopping pattern associated with transmissions by the second device, said first frequency specified by the frequency hopping pattern for one of a plurality of nearest future transmissions from the second device to the first device;

10 the second device receiving the first transmission and providing communication quality measurements respectively associated with receipt of the first transmission; and

15 based on the communication quality measurements, the second device sending said one transmission to the first device on the first frequency.

2. The method of Claim 1, wherein said receiving step includes the second device receiving the first transmission via a plurality of antennas, said providing step including providing communication quality measurements respectively associated with receipt of the first transmission by the respective antennas, and said sending step including using the antennas to send said one transmission to the first device on the first frequency.

3. The method of Claim 2, including the second device calculating weighting coefficients for the respective antennas thereof based on the communication quality measurements.

4. The method of Claim 3, wherein said using step includes the second device using the weighting coefficients to send said one transmission.

5. The method of Claim 2, including the second device selecting one of the antennas based on the communication quality measurements, and said sending step including the second device using the selected antenna to send said one transmission to the first device on the first frequency.

6. The method of Claim 1, including the second device sending a transmission to a third device after said first transmission and before said one transmission.

7. The method of Claim 6, including the third device sending a transmission to the second device after said first transmission and before said one transmission.

8. The method of Claim 7, including the second device sending a transmission to a fourth device after said first transmission and before said one transmission.

9. The method of Claim 8, including the fourth device sending a transmission to the second device after said first transmission and before said one transmission.

10. The method of Claim 9, wherein the first, third and fourth devices are Bluetooth slave devices and the second device is a Bluetooth master device.

11. The method of Claim 7, wherein said step of the third device sending a transmission to the second device includes the third device sending the transmission to the second device on a second frequency specified by the frequency hopping pattern for one of a plurality of nearest future transmissions from the second device to the third device.

12. The method of Claim 1, wherein said one transmission is immediately timewise adjacent said first transmission.

13. The method of Claim 1, wherein the first device is a Bluetooth slave device and the second device is a Bluetooth master device.

14. The method of Claim 1, wherein said sending step includes the second device changing one of a coding rate associated with said one transmission, a packet length associated with said one transmission and a transmission power level associated with said one transmission, based on the communication quality measurements.

15. A frequency hopping wireless communication apparatus, comprising:
at least one antenna for transmitting and receiving communications via a wireless communication link;

5 a wireless communication interface coupled to said at least one antenna for receiving
from a further frequency hopping wireless communication apparatus via said at least one
antenna a first transmission on a first frequency specified by a frequency hopping pattern
associated with transmissions by said wireless communication interface, said first frequency
specified by the frequency hopping pattern for one of a plurality of nearest future
transmissions to the further apparatus; and

10 said wireless communication interface including a measurement portion for providing
communication quality measurements respectively associated with receipt of said first
transmission by said at least one antenna, said wireless communication interface operable in
response to receipt of said first transmission and based on said communication quality
measurements for sending said one transmission to the further apparatus via said at least one
antenna on said first frequency.

15 16. The apparatus of Claim 15, including an indicator coupled to said wireless
communication interface for indicating to said wireless communication interface that, after
sending said one transmission, a second frequency is to be used to receive a nearest future
transmission from the further apparatus, said second frequency specified by the frequency
hopping pattern for a transmission to the further apparatus that is one of a plurality of
transmissions to the further apparatus that most closely follow said one transmission.

17. The apparatus of Claim 15, wherein said one transmission is immediately
timewise adjacent said first transmission.

18. The apparatus of Claim 15, wherein said wireless communication interface
is operable after said first transmission and before said one transmission for sending and
receiving respective transmissions to and from a frequency hopping wireless communication
apparatus other than the further apparatus.

19. The apparatus of Claim 15, provided as a Bluetooth master device.

20. A frequency hopping wireless communication apparatus, comprising:
an antenna for transmitting and receiving communications via a wireless
communication link;

a wireless communication interface coupled to said antenna for sending via said
antenna to a further frequency hopping wireless communication apparatus a first
transmission on a first frequency specified by a frequency hopping pattern associated with
transmissions by the further apparatus, said first frequency specified by the frequency
hopping pattern for one of a plurality of nearest future transmissions from the further
apparatus to said wireless communication interface; and

said wireless communication interface operable for receiving said one transmission
from the further apparatus via said antenna on said first frequency, said nearest future

transmission sent by the further apparatus based on a plurality of communication quality measurements made by the further apparatus and respectively associated with receipt of said first transmission by the further apparatus.

5 21. The apparatus of Claim 20, including an indicator coupled to said wireless communication interface for indicating to said wireless communication interface that, after receipt of said one transmission, a second frequency is to be used to send a nearest future transmission from said wireless communication interface to the further apparatus, said second frequency specified by the frequency hopping pattern for a transmission from the further apparatus to said wireless communication interface that is one of a plurality of transmissions from the further apparatus to said wireless communication interface that most closely follow said one transmission.

10 22. The apparatus of Claim 20, wherein said nearest future transmission is immediately timewise adjacent said first transmission.

15 23. The apparatus of Claim 20, provided as a Bluetooth slave device.

 24. The method of Claim 1, wherein said one transmission is the nearest of said plurality of nearest future transmissions.

 25. The apparatus of Claim 15, wherein said one transmission is the nearest of said plurality of nearest future transmissions.

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